

INDUSTRIAL TECHNOLOGY GENERAL MECHANICS

RELATED ACADEMIC SKILLS: WHAT THE VOCATIONAL INSTRUCTION SHOULD REINFORCE:

ACADEMIC AREA	INSTRUCTIONAL LINKS
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OCCUPATIONAL COMPETENCIES:

1. Inspect and identify suspension for damaged (worn) parts.	Language Arts	Uses/text resources/ operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
2. Remove, replace and pack wheel bearings.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
3. Inspect and identify steering for damaged (worn) parts.	Language Arts	Uses/text resources/ operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
4. Remove and replace steering and suspension manual components.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Math	Understands/line/angle/ relationship
5. Identify, remove and replace worn or damaged belts and hoses	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
6. Test and install engine coolant, caps and pressure test.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques

7. Identify, remove and replace engine temperature	Language Arts	Uses/text resources/operating manual control components.
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
8. Check and/or change all fluids and filters per specifications.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Science	Analyzes/evaluates/environmental issues/waste management
9. Lubricate vehicle per specifications.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
10. Demonstrate proper handling of seals and	Language Arts	Uses/text resources/operating manual bearings.
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
11. Inspect tires and wheels for damage, irregular	Language Arts	Uses/text resources/operating manual wear and pressure.
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
12. Rotate and balance wheels.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
13. Check brake system operation including	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
14. Remove and replace brake system components	Language Arts	Uses/text resources/operating manual

	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Science	Analyzes/evaluates/environmental issues/waste management
15. Bleed and adjust brake system components.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
16. Machine brake drums and rotors.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
17. Rebuild wheel, master cylinders and calipers.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
18. Identify and test emission control systems and components, remove and replace as necessary	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
19. Evaluate engine operation using testing equipment.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Math	Formulates/verifies/conclusions
20. Remove, replace and adjust ignition components.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
21. Check, remove and replace exhaust system	Language Arts	Uses/text resources/operating manual components.
	Language Arts	Comprehends/information oral-written/rationale

	Science	Applies/uses/laboratory instruments-techniques
22. Evaluate operation of heating and air conditioning systems. Perform repairs on heating system.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Science	Analyzes/evaluates/environmental issues/waste management
	Math	Formulates/verifies/conclusions
23. Identify, test, remove and replace fuel system	Language Arts	Uses/text resources/operating manual component parts.
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
24. Remove and replace engine.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
25. Disassemble, evaluate and reassemble an engine.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Math	Calculates/evaluates/measurement/precision
	Math	Formulates/verifies/conclusions
26. Test and evaluate automotive batteries using appropriate test equipment.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Math	Formulates/verifies/conclusions
27. Identify, test and evaluate charging systems and components, remove and replace as required (includes use of appropriate diagnostic equipment).	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
	Math	Formulates/verifies/conclusions

28. Identify, test and evaluate starting systems and components, remove and replace as required (includes use of appropriate diagnostic equipment).	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
29. Test and evaluate other electrical circuits and components using a voltmeter, ohmmeter, ammeter and test light.	Math	Formulates/verifies/conclusions
	Science	Describes/electricity measurement/ammeter/voltmeter
	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
30. Cut threads with taps and dies, remove broken figures/fasteners and repair threads.	Math	Formulates/verifies/conclusions
	Math	Estimates/circumference
	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
31. Identify and specify SAE and metric fasteners.	Language Arts	Uses/text resources/operating manual
32. Inspect, remove, replace and adjust clutch assembly and related components.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
33. Inspect, remove and replace U-joints and carrier bearings.	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques
34. Remove and replace manual and automatic	Language Arts	Uses/text resources/operating manual
	Language Arts	Comprehends/information oral-written/rationale
	Science	Applies/uses/laboratory instruments-techniques

35. Apply shop and equipment safety rules including hazardous materials.	Science	Analyzes/environmental issues/impact
	Language Arts	Comprehends/information-written/rationale
	Science	Applies/uses/laboratory techniques/safety
	Science	Analyzes/evaluates/environmental issues/waste management
36. Apply first aid procedures.	Science	Applies/uses/laboratory instruments-techniques
	Language Arts	Comprehends/information-written/rationale
37. Discuss the hazards of substance abuse in the workplace.	Language Arts	Comprehends/information oral-written/rationale
38. Identify and report unsafe shop conditions.	Language Arts	Collects/organizes/information oral-written/observations
39. Demonstrate use of measuring devices (micrometer, etc.).	Language Arts	Comprehends/information oral-written/rationale
	Math	Calculates/measurement/precision
40. Demonstrate proper care and use of hand and power tools.	Language Arts	Comprehends/information oral-written/rationale

LEADERSHIP COMPETENCIES:

1. Follow directions.	Language Arts	Comprehends/information oral-written
	Language Arts	Attends/directions/tasks
2. Speak efficiently in front of others.	Language Arts	Presents/informal speech/discussion
	Language Arts	Evaluates/information-oral
3. Lead a discussion.	Language Arts	Presents/informal speech/discussion
4. Utilize time effectively.	Free Enterprise	Identifies/cost factors/human resources
	Language Arts	Applies/uses/study habits/methods
5. Prioritize series of tasks.	Language Arts	Composes/edits/draft oral-written/sequence
6. Define goals.	Language Arts	Describes/purpose/strategy
7. Work effectively with others.	Language Arts	Adapts/style
8. Listen effectively.	Language Arts	Adapts/strategy/listening

9. Resolve conflict.	Language Arts	Adapts/diction/audience-purpose-situation
10. Adapt to environment/situation.	Language Arts	Adapts/style

JOB GETTING, JOB KEEPING COMPETENCIES:

1. Identify requirements for a job.	Language Arts	Identifies/information-written/main idea
2. Complete required forms.	Language Arts	Composes/edits/forms/documents
3. Write application letter.	Language Arts	Composes/letters/business
4. Evaluate job offer.	Language Arts	Evaluates/information-written/appropriateness
5. Interact with others in a courteous and tactful manner.	Language Arts	Adapts/diction/audience/purpose-situation
6. Cooperate with others.	Language Arts	Adapts/diction/audience/purpose-situation
7. Accept individual differences.		
8. Respect the property of others.		
9. Organize thoughts and clearly expresses point of view.	Language Arts	Adapts/strategy/speaking
10. Organize thoughts and writes clearly.	Language Arts	Adapts/strategy/writing
11. Exhibit dependability.		
12. Demonstrate punctuality.		
13. Ask for help when needed.		
14. Accept new challenges.		
15. Accept supervision willingly.	Language Arts	Attends/directions/tasks
16. Adapt to change/demonstrates flexibility.		
17. Manage time effectively.	Language Arts	Applies/uses/study habits/methods
18. Follow rules and regulations.	Language Arts	Comprehends/information-written/rationale
19. Produce quality work.	Language Arts	Attends/directions/tasks
20. Work within guidelines.	Language Arts	Comprehends/information-written/

	Language Arts Science	rationale Attends/directions/tasks Applies/uses/laboratory instruments/techniques
21. Take responsibility for mistakes and/or good work.		
22. Comply with safety and health rules. written/rationale	Language Arts Science Free Enterprise	Comprehends/information- Applies/uses/laboratory techniques/safety Describes/explains/government impact/costs/regulations
23. Utilize equipment correctly.	Language Arts	Comprehends/information-written/ rationale
24. Maintain clean and orderly work area.		
25. Demonstrate personal hygiene and cleanliness.		
26. Explain the concept of profit.	Free Enterprise	Describes/explains/economic concepts

ENTREPRENEURSHIP COMPETENCIES:

1. Analyze business organizations.	Language Arts Free Enterprise	Evaluates/information-written/ relationship of ideas Describes/explains/economic concepts
2. Identify skills required of a business owner.	Language Arts Free Enterprise	Identify/information-written/main idea Describes/explains/economic concepts
3. Recognize relevant, ethical issues in business.	Language Arts Free Enterprise	Comprehends/information written- oral Describes/explains/economic concepts
4. Analyze the contents of a business plan.	Language Arts Free Enterprise	Evaluates/information-written/ appropriateness Describes/explains/economic concepts
5. Recognize the importance of technical assistance.	Language Arts	Comprehends/information written- oral/main idea
6. Explain types of business ownership.	Language Arts Free Enterprise	Comprehends/information oral- written/main idea Describes/explains/economic

concepts